

WHAT IS CLAIMED IS:

1. A method of managing communications among a plurality of premise installations in a cable communications distribution system, the cable distribution system including at least one splitter for spreading communicated signals from a headend to a plurality of branches, each of the plurality of branches having at least one premise installation, the method comprising the
5 steps of:

determining an attenuation parameter for each of a plurality of components in the distribution system;

determining an isolation parameter between branches coupled to the at least one splitter;

10 calculating an overall signal attenuation over a selected frequency band between premise installations on different ones of the plurality of branches; and

responsive to the overall signal attenuation exceeding a minimum isolation threshold value between first and second branches, assigning a frequency within the selected frequency band to a premise installation on each of the first and second branches.

2. The method of claim 1, wherein each of the premise installations includes a splitter.

3. The method of claim 2, wherein the cable communications distribution system includes a fiber optic facility extending from the headend to a street splitter having a fiber-to-coaxial interface.

4. The method of claim 2, wherein at least one of the premise installations includes a notch filter.

5. The method of claim 2, wherein at least one of the splitters of at least one of the premise installations includes an amplifier.

6. The method of claim 1, wherein the determining steps are performed by *a priori* knowledge of attenuation and isolation parameters of components in the cable distribution system.

7. The method of claim 6, further comprising:
establishing a set of basic rules corresponding to known network configurations,
responsive to the determining and calculating steps;
wherein the assigning step is performed responsive to comparing the system to the basic
5 rules.

8. The method of claim 1, wherein the determining step comprises:
operating the cable distribution; and
measuring the attenuation and isolation parameters using spectrum
measurement equipment.

9. The method of claim 1, wherein each of the premise installation includes a home
cable network modem having a branch calculation operational mode;
wherein the step of determining an isolation parameter comprises:
transmitting a signal from one of the home cable network modems, the
5 transmitted signal comprising a known pattern at a specific power and frequency;
measuring the power of the transmitted signal at each of the home cable network
modems; and
building a topology database from the measured isolation among the home cable
network modems.

10. The method of claim 1, wherein the frequency band consists of frequencies above
860 MHz.

11. The method of claim 1, wherein at least one of the premise installations includes a transponder, for receiving signals transmitted from within the premise installation at a first frequency, and for retransmitting the received signals at a second frequency;

5 wherein the assigning step assigns the first and second frequencies to the at least one of the premise installations having the transponder.

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